



A new product on the Idaho agriculture landscape is the table **grape**. For some time Idaho has been known for its wine **grape** production, but in recent years, much effort has been directed at developing a table **grape** industry within the state.

"The table **grape** market is competitive, but the key is quality - you've got to have high-quality **grapes**," says Ron Mann, the president of the Idaho Table **Grapes** Growers Association. "We think we can become known for premium table **grapes**."

The state's table **grape** growers are concentrated in six counties close to the Oregon border. They believe they can grow premium fruit because of the excellent loam soils and the 2100-foot average elevation makes for warm days and cool nights. These temperature conditions allow Idaho producers to grow larger **grapes** than their chief competitors in California. Idaho **grapes** are harvested in September and October—after Californian and before Chilean **grapes** arrive in the market, giving Idaho an important marketing window for table **grapes**.



**Grapes** are a sweet, nutritious treat. A handful of **grapes** (about 20) have only about 70 calories and contain vitamin C, potassium and powerful antioxidants that help protect against cancer. Look for Idaho Preferred table **grapes** at your local market!



# **FUN FACTS ABOUT GRAPES**

## **BACKGROUND INFORMATION ON GRAPES**

Did you know that more grapes are grown around the world than any other fruit? Grapes are one of oldest known cultivated fruits. Fossil evidence suggests that grapes were grown and harvested in the area now known as Iran as early as 8000 years ago. Concord grapes are one of only three fruits native to North America (the other two are cranberries and wild blueberries.) In the late 18<sup>th</sup> century Spanish missionaries traveling north from Mexico are thought to have introduced European grapes to California. Today California is a leading producer of both wine and table grapes.

## **TYPES OF GRAPES**

There are thousands of varieties of grapes grown throughout the world, but all these varieties can be classified as either European or American. European grapes have tight skins that adhere to the fruit while the American varieties have loose skin, or slip-skin that easily slips from the fruit when cut or bitten. Grapes can also be classified as seedless or with seeds, or according to use - table grapes for eating or making into raisins, grapes for use in commercial foods (like Concord grape jelly) or grapes for wine or juice. The most popular table grape variety in the U.S. is the Thompson Seedless. Almost any time of year you can find red and green Thompson seedless table grapes in your local supermarket.

## **HOW DO GRAPES GROW?**

Grapes can grow in almost any climate, but the vines thrive in temperate regions with average annual temperatures above 50 degrees Fahrenheit. The vines are usually developed from cuttings from other vines versus being started from seed. Like most fruits, grapes develop sugar as they ripen, but they do not get riper and sweeter after they are harvested.

## **WHERE DO GRAPES GROW?**

Italy is the number one producer of table grapes, followed by Chile and the United States. Grapes sold in U.S. supermarkets are grown either in the U.S. (most likely in California, which produces 97 percent of the table grapes grown in the U.S.) or in Chile. (Chile extends along the western coast of South America. It is in the Southern Hemisphere, which means its seasons are opposite those in the U.S. When it's winter in the U.S., it's summer in Chile.) U.S. supermarkets get grapes from Chile January through May. Grapes from California are available June through November.

## **GREAT WAYS TO EAT GRAPES**

Did you know that grapes are one of the most popular fruits in the United States? They rank sixth behind bananas, apples, watermelon, oranges and cantaloupe. Most people love grapes 'cause they're so sweet and juicy, and because they're fun to eat! You can pop grapes into your mouth individually, enjoying the crunch and sweetness of each one. Grapes are also great added to fruit salads and chicken salads. The next time you're in the mood for a fun food, grab some grapes!

# Harvest of the Month

The goal of the "Harvest of the Month" program is to increase enjoyment & consumption of fruits & vegetables. To motivate students to make healthy choices, they will taste & explore different fruits & vegetables featured each month.

June 2001 – Grapes are the featured item

## Great Grape Facts

- ❖ Today, an estimated 8,000 different varieties of grapes are cultivated. Over 50 different varieties are grown in California.
- ❖ California grape farmers provide 97% of the nation's commercially grown table grapes. 17% are shipped to 40+ overseas markets.
- ❖ In the U.S. per capita consumption of table grapes is 8 pounds per person. Hong Kong consumers eat more grapes than Americans do.
- ❖ On average there are 100 berries per bunch on each grape cluster.
- ❖ If left alone a grape vine will spread 50 feet or greater.

## "The Hungry Fox & the Grapes"

*A story from Aesop's Fables*

One day, a fox was trotting through the woods when he spotted a large, juicy bunch of grapes hanging high up on a vine. The fox was hungry and the grapes looked ripe and delicious. The fox tried jumping up to catch some of the grapes in his mouth. But however high he jumped the grapes were always just out of his reach. He became tired and angry as he jumped again and again. Soon the fox realized he would never reach the grapes. He walked away feeling disappointed. To make himself feel better, he muttered that the grapes looked small and unripe and would have tasted sour. *This is where the saying "sour grapes" comes from.*

## Nutritional Facts

Nutrition Facts for Grapes	
<b>Serving Size</b>	cup, about 18 grapes
Amount Per Serving	
<b>Calories 57</b>	<b>Calories from Fat 0</b>
% Daily Value*	
<b>Total Fat</b> 0g	0%
Saturated Fat 0g	0%
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 0 mg	0%
<b>Potassium</b> 148mg	4%
<b>Total Carbohydrate</b> 14g	5%
Dietary Fiber 1g	4%
<b>Protein</b> 1 g	
<b>Vitamin A</b> 1%	<b>Vitamin C</b> 15%
<b>Calcium</b> 1%	<b>Iron</b> 0%

\* Percent Daily Values are based on a 2,000 calories diet. Your daily values may be higher or lower depending on your calorie needs.

# Great Grape Investigations

1. Try dehydrating grapes to raisins (see last page)
  2. Test different varieties of grapes for PH level. Is there any correlation between acidity level and color? (Litmus paper is available at your local MST center)
  3. **Gross Grapes** - Grow mold in a zip lock bag! \*
    - How would temperature effect mold growth?
    - Does it matter if the grapes are wet or dry?
    - What other variables can you think of that would affect mold growth?
    - Is mold in food sometimes beneficial?
  4. **Grape Attributes** - describe the inside/outside of a grape in your HOM journal. Note the size, shape, texture, taste, smell ...
- Reference: Science Explorer

**\*CAUTION:** Be sure to keep all mold experiments enclosed. Some people have allergies to mold spores.

## Research Questions

1. How can you keep your food safe for a long period of time?
2. What variables make food spoil?
3. Are grapes treated to prevent spoilage?
4. How are grapes being utilized by the medical field to prevent disease?
5. What other parts of the grape plant are used in cooking?
6. Why do some grapes have seeds and others don't?
7. Why are grapes considered berries?

### Polar Berries

For a chilly treat, freeze grapes!

1. Rinse grapes and drain well. Grapes should be dry.
2. Place whole cluster in a bowl or loose grapes on a cookie sheet, then freeze
3. Just pop them in your mouth or toss them into your favorite yogurt or salad.

### Glitter Grapes

#### **Ingredients:**

1-pound seedless grapes  
1 3oz package of lime flavored gelatin powder

#### **Directions:**

Divide grapes into small bunches, rinse & drain. Put gelatin powder in a small plastic container with a lid that can be frozen. Add grapes and shake to coat. Shake off excess powder, put lid on container and freeze. Serve grapes frozen.

## Grape Moments in History

- ❖ Grapes are one of the oldest known crops cultivated. Approximately 8000 years ago the grape variety *Vitis vinifera* was grown between the Black Sea and the Caspian Sea, near northern Iran.
- ❖ There are records of Egyptians growing grapes 6000 years ago.
- ❖ Grapes are mentioned in the oldest known language, Sumerian, dating back 5000 years ago.
- ❖ Native Americans were known to grow grapes 3800 years ago.
- ❖ In 1769 Spanish Friars began grape cultivation at missions in California.
- ❖ In 1839, William Wolfskill, walked 25 miles with a bullet in his chest and went on to plant the first grape vine in what is now known as downtown Los Angeles.
- ❖ In early Roman times, birch trees were planted near grape vines, so the vines would climb the tree, rather than spread on the ground. Thus the first trellis system was developed.
- ❖ In the 1970's Caesar Chavez used grapes to make a political statement for migrant farm workers.
- ❖ As recently as 1997 scientists at the University of Illinois released evidence that grapes may help prevent cancer.

**Project:** Draw a timeline to represent these grape moments in history

### Grape Math

1. How many grapes are on a cluster? Determine the median, mode and mean.
2. Compare and sort various grapes by color, shape, size, weight and taste. Graph results.
3. Weigh your grapes before dehydrating and after, compare the difference.

Dehydrators are available through:  
Gardening with kids (800) 538-7476  
Lets Get Growing (800) 408-1868

### Field Explorations

- Visit your local Farmers Market and interview a grape grower. Find out how grapes are grown and where.
- Interview the produce person at your local supermarket and find out how to select ripe grapes and their seasonal availability.
- How much do grapes cost, does it differ depending on type or time of year? Why might that be?

## Fun Grape Activities

- Use thumbprints in a stamp ink pad to make beautiful pictures of grape clusters
- ▣ Make Glitter grapes!
- ❖ **Make dolmas (a Greek and Middle Eastern dish wrapped in grape leaves)**
- Make grape kebobs using assorted fruits and cheese cubes
- **Freeze grapes and use as ice cubes in your favorite drink**
- If you have a grape vine, try weaving it into a wreath

## Grape Salsa Recipe

### Ingredients:

- 2 cups coarsely chopped seedless grapes
- \_ cup each, chopped green onions and diced fresh or canned Anaheim chilies
- 2 tablespoons chopped cilantro
- 2 tablespoons vinegar
- 1 clove garlic, minced
- \_ teaspoon salt
- 1/8 teaspoon bottled hot pepper seasoning (optional!)

### Directions:

Combine all ingredients in medium bowl; mix well. Let stand at least 1 hour before serving. Drain off excess liquid before serving. Makes about 2 cups.

Thompson seedless grapes are usually available from June to November. Grapes dry fastest in hot, dry weather. It may take up to 3 weeks or more for your grapes to turn into raisins. Other methods of dehydrating include using an oven or a dehydrator. The goal of dehydrating foods is to reduce the moisture content so that the bacteria that cause decay cannot survive.

Nutrient retention of dried foods is higher than that of any other preservation method. Sun energy, when used instead of an oven or dehydrator, is absolutely free! Using a preservative is not necessary if the food will be eaten right after being dried. Sulfur is a preservative used for color preservation. Dips such as lemon, honey or ascorbic acid are used for the same purpose. Grapes are fully dried when leather textured.

Please refer to 1987 AIMS Education Foundation, lesson plans FUN WITH FOODS and FALL INTO MATH AND SCIENCE (available at your local MST Center)

Resources: [www.tablegrapes.com](http://www.tablegrapes.com)

Published by the LAUSD Nutrition Network, a joint project of Food Services Branch & Educational Services Division.

## NUTRIENTS IN GRAPES

Do you include grapes as part of your 5 A Day? One 5 A Day serving of grapes equals    cup or about 18 grapes. Grapes are a good source of vitamin C, a nutrient you need to stay strong and healthy. Grapes also contain antioxidants, substances that help keep your body's cells healthy.

Nutrition Facts for Grapes	
Serving Size <u>  </u> cup, about 18 grapes	
Amount Per Serving	
Calories 57	Calories from Fat 0
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 0 mg	0%
Potassium 148mg	4%
Total Carbohydrate 14g	5%
Dietary Fiber 1g	4%
Protein 1 g	
Vitamin A 1%	Vitamin C 15%
Calcium 1%	Iron 0%

\* Percent Daily Values are based on a 2,000 calories diet.  
Your daily values may be higher or lower depending on  
your calorie needs.

# 5 A DAY AND GRAPES

## KIDS ACTIVITY SHEET

Try this fun & easy recipe

### COOL GRAPES

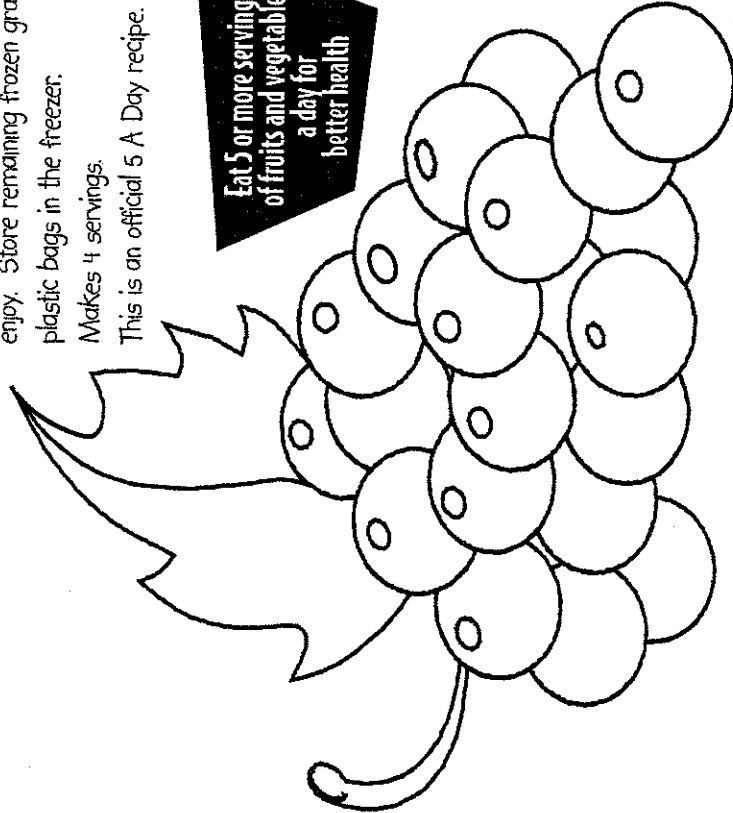
1 large bunch of seedless  
green or red grapes

Wash the grapes and remove the  
stems. Arrange grapes on a baking  
sheet and place in the freezer for 30  
minutes. Remove from freezer and  
enjoy. Store remaining frozen grapes in  
plastic bags in the freezer.

Makes 4 servings.

This is an official 5 A Day recipe.

Eat 5 or more servings  
of fruits and vegetables  
a day for  
better health



Produce for Better Health<sup>®</sup>  
Foundation

302 235 ADAY



# WHAT IS A SERVING?

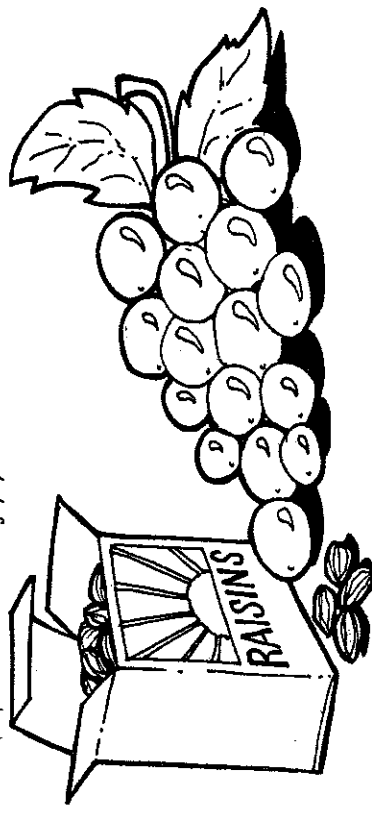
**A 5 A DAY SERVING SIZE IS SMALLER THAN YOU THINK.**  
1 medium-size fruit = 3/4 cup (6 oz.) of 100 percent fruit or vegetable juice = 1/4 cup of dried fruit  
1/2 cup of cooked, frozen, or canned vegetables or fruit = 1 cup of raw leafy vegetables  
1/2 cup of cooked dry peas or beans = 1/4 cup of dried fruit

## FROM GRAPES TO RAISINS

Do you know where raisins come from?

Try this and find out. You will need: seedless grapes,  
paper plate, paper towels, and tape

1. Wash a cluster of grapes; blot dry with paper towels.
2. Place grapes on a paper plate and cover with a paper towel with a few holes poked in it for ventilation.
3. Staple or tape the paper plate and paper towel together along the edges.
4. Place the plate in direct sunlight and leave for 4-5 days.
5. Remove paper towel and enjoy your fresh raisins!



**FOR MORE FUN FOR KIDS,  
GO TO [WWW.5ADAY.COM](http://WWW.5ADAY.COM)**



## *Grape Fact Sheet*

Drinking Concord grape juice can significantly increase good cholesterol. (Nutra USA)

Store grapes in the refrigerator in a perforated plastic bag, or in a location with low temperatures and high humidity. Grapes should last about two weeks if stored properly.

1-1/2 pounds of grapes yields approximately four cups of grapes.

10 grapes contain approximately 40 calories, small amounts of potassium, thiamin and Vitamin A.

Grapes are the number one cultivated fruit crop in the world. There are 20 million acres of grapes planted worldwide.

Grapes are the most valuable fruit crop in the United States.

The world production of grapes is over 72 million tons.

The average person eats eight pounds of grapes per year.

Grapes are easier to peel when they are frozen. Rinse frozen grapes in lukewarm water and the skins will split and slip right off.

Botanically, grapes belong to the family Vitaceae. Grapes are juicy berries, with thin skins. They grow on vines in clusters as small as six, or as large as 300 berries. Grapes may be black, blue, golden, green, purple, red or white.

Originating in both hemispheres, grapes grow all over the world both as wild vines and in tended vineyards. They are used as a source of table fruit, raisins, vinegars and wines. More than 8,000 varieties have been hybridized for cultivation from the European Grape (*Vitis vinifera*) and the North American Fox grape (*Vitis labrusca*) and Muscadine Grape (*Vitis rotundifolia*). Of these, 50 varieties are grown for fresh eating, a few for grape juice or to make currants, raisins or sultanas (white raisins) and most become wine. About 66 million metric tons of grapes are harvested annually throughout the world.

- **Grape Culture**

Grape growing is a year-round job. In winter, the vines are pruned to force new growth and discourage crowding. Cuttings from pruned canes may be grafted onto a dozen native rootstock to produce new vines. After four years, these vines will produce fruit. With care, vines may bear for as long as 100 years.

In early spring compost is added. Healthy nutrient-rich soil is important, since the grapevines draw all their nutrients from the top foot of soil. In spring and summer, the trellises are maintained. When daytime temperatures reach about 68° F., the flowers bloom and shoots emerge next to the flower clusters. As the flowers die, tiny green berries appear. These grow and ripen into clusters of grapes.

In summer, the vines are hedged, a process that cuts the tops of the vines above the trellises. Leaves are also pruned to expose the grape clusters to sunlight. If necessary, the grapevines are fertilized using a broadcast or foliar feed. Grapevines need plenty of sunshine and ample water. Vineyards may install irrigation systems, usually sprinklers or drip irrigation.

Eating grapes is good for your health and your heart. Grapes have a high sugar content, making them a good energy source. They contain Vitamin A, B1, B2, C, Iron, potassium, niacin and rutin, minerals, pectin, organic acids (malic, tartaric) and fiber.

Grape skins and seeds contain tannins. The seeds also contain an edible oil which is rich in Vitamin E and poly-unsaturated fatty acids. When extracted using heat, it does not become rancid and can be used in cooking.

Phytonutrients are biologically active substances responsible for giving plants their fragrance, color and flavor. They also help protect plants from pests, viruses, bacteria and excessive sunlight. Grape phytonutrients include catech, resveratrol, quercetin, and anthocyanin. Resveratrol, found primarily in the skin of grapes, has been found to fight liver and colon cancers. It is also believed to reduce heart disease through its anti-inflammatory properties.

Other studies are looking into the positive effects of grapes on lowering LDL and total cholesterol, decreasing oxidation of LDL cholesterol, reducing clotting of platelets, lowering both systolic and diastolic blood pressure and improving arterial elasticity. In addition, compounds found in purple grape juice and wine have been found to fight urinary tract infections and to block a dangerous cardiovascular effect of second-hand smoke.

### Did You Know

- Since the 1970s, the U. S. per-capita consumption of table grapes has grown from 2 to 8 pounds annually; and we drink 4.1 pounds of grape juice yearly.
- About ninety-five percent of all grapes grown in the world are the European grape (*Vitis vinifera*).
- Leading grape producing countries in order are: Italy; France; United States; Spain; Turkey and China. Ten percent of the world's grapes come from the U.S.
- Thirteen U.S. states list grapes as an agricultural crop. California produces 90% of all U.S. grapes - 6 million tons. About 1/5 of the world's raisins and 1/10 of its table grapes are grown in California.
- Nearly 85 percent of domestic grape production is processed, two-thirds of which is used for wine. More than a quarter is dried for raisin production, while less than ten percent is used for juice. Small quantities become jams, jellies and other processed foods.
- The United States imports close to 375,000 tons of grapes. Grape juice is exported to Canada, Japan and Korea.
- Grape leaves can be eaten or preserved in brine. They are commonly stuffed with rice or meat Middle Eastern and Mediterranean cuisine.
- Ancient Egyptians dried grapes and other fruits in the sun, and may even have buried them under the hot desert sands to dry. In the 1970s, a heat wave in California turned the San Joaquin Valley grape crop into raisins, starting a production trend there. This area now produces 95 percent of the U.S. raisin crop. However, the world's leading exporter of raisins is Turkey.
- It takes four-and-a-half pounds of grapes to make one pound of raisins. Most U.S. raisins are dried, Thompson Seedless grapes, although some come from Black Corinth and Muscat. Sun-dried raisins turn a dark, reddish brown after grapes dry for two to three weeks outdoors in the sun. To make golden raisins, grapes are washed and placed indoors on wooden trays. Warm air blows on the grapes for 24 hour; once dry sulfur dioxide is applied